

## CLAIMS

1. (Once amended) An interpolator for processing an image comprised of an array of pixels, the interpolator comprising:
  - (a) feature extractor to identify a predetermined image feature in a pixel sequence for processing a pixel sequence contained in the array of pixels to extract visually significant features therein;
  - (b) a feature comparator to compare similar predetermined image features for matching similar extracted features in adjacent pixel sequences; and
  - (c) an alignment controller using said matched features to select visually most relevant source pixels to generate a target pixel responsive to the feature comparator.
2. (Once amended) An interpolator as defined in claim 1, said feature extractor including a programmable state machine.
3. (Once amended) An interpolator as defined in claim 1, said feature comparator including a correlator to correlate the similar predetermined image features for determining said feature similarities.
4. (Once amended) An interpolator as defined in claim 1, said alignment controller to generate generating said target pixel position by computing a sequence of relative shifts between adjacent rows, the sequence of relative shifts bringing the predetermined image features into alignment.
5. (Once amended) A method for interpolating a target pixel in an array of source pixels, comprising ~~the steps of:~~
  - (a) processing source pixels rows of the array to identify predetermined pixel sequences of pixels characterizing visually significant features;
  - (b) matching similar features predetermined pixel sequences in adjacent rows and;
  - (c) generating a target pixel responsive to the matching using said matched features to select visually most relevant source pixels to generate a target pixel.
6. (New) An interpolator as defined in claim 1 where the feature extractor is user programmable.